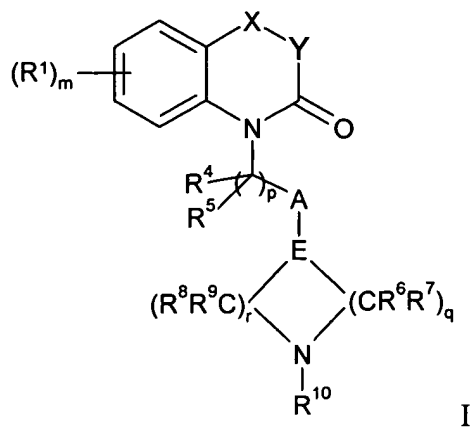


WHAT IS CLAIMED IS:

1. A compound of the formula:



and pharmaceutically acceptable salts or prodrugs thereof,  
wherein:

m is from 0 to 4;

p is from 1 to 3;

q is from 1 to 3;

r is from 1 to 3;

A is arylene or heteroarylene;

E is N or C;

X is O, S, or  $-\text{CR}^a\text{R}^b-$  wherein  $\text{R}^a$  and  $\text{R}^b$  each independently is hydrogen or alkyl;

each  $\text{R}^1$  independently is halo, alkyl, haloalkyl, heteroalkyl, hydroxy, nitro, alkoxy, cyano,  $-\text{S}(\text{O})_s\text{R}^c$ ,  $-\text{NR}^c\text{R}^d$ ,  $-\text{C}(=\text{O})-\text{NR}^c\text{R}^d$ ,  $-\text{SO}_2-\text{NR}^c\text{R}^d-\text{N}(\text{R}^c-\text{C}(=\text{O})-\text{R}^d$  or  $-\text{C}(=\text{O})-\text{R}^c$ , wherein s is from 0 to 2 and  $\text{R}^c$  and  $\text{R}^d$  each independently is hydrogen or alkyl;

Y is  $-(\text{CR}^2\text{R}^3)_n-$  wherein n is 1 or 2 and  $\text{R}^2$  and  $\text{R}^3$  each independently is hydrogen or alkyl, or X and Y together form an alkenylene group;

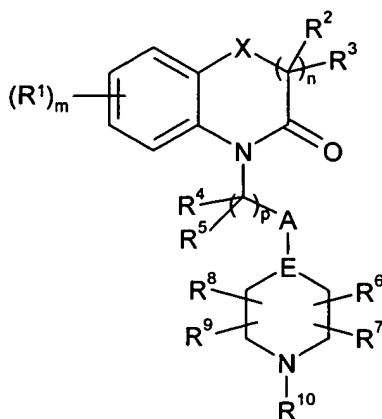
$\text{R}^4$ ,  $\text{R}^5$ ,  $\text{R}^6$ ,  $\text{R}^7$ ,  $\text{R}^8$ , and  $\text{R}^9$  each independently is hydrogen or alkyl; and

$\text{R}^{10}$  is hydrogen, alkyl, arylalkyl, aryloxyalkyl, heteroaryl or heterocyclyl.

2. The compound of claim 1, wherein E is N.

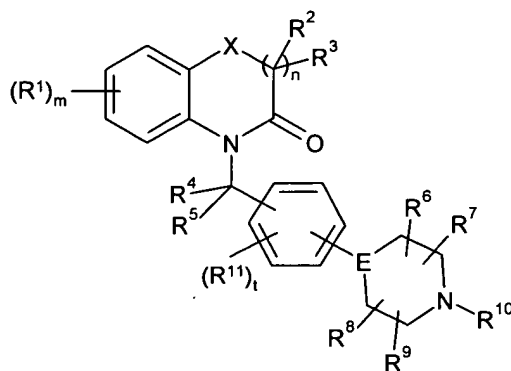
3. The compound of claim 2, wherein X is  $-\text{CR}^a\text{R}^b-$ .
4. The compound of claim 2, wherein X is O.
- 5 5. The compound of claim 3, wherein Y is  $-(\text{CR}^2\text{R}^3)_n-$  and n is 1.
6. The compound of claim 3, wherein Y is  $-(\text{CR}^2\text{R}^3)_n-$  and n is 2.
7. The compound of claim 5, wherein A is optionally substituted phenylene.
- 10 8. The compound of claim 7, wherein  $\text{R}^2$ ,  $\text{R}^3$ ,  $\text{R}^a$  and  $\text{R}^b$  are hydrogen.
9. The compound of claim 7, wherein q is 2 and r is 2.
- 15 10. The compound of claim 7, wherein m is 0.
11. The compound of claim 7, wherein m is 1 and  $\text{R}^1$  is halo or alkoxy.
12. The compound of claim 7, wherein A is halophenylene, haloalkylphenylene,  
20 alkylphenylene, alkoxyphenylene or alkylenedioxyphenylene.
13. The compound of claim 7, wherein  $\text{R}^6$ ,  $\text{R}^7$ ,  $\text{R}^8$  and  $\text{R}^9$  are hydrogen.
14. The compound of claim 4, wherein Y is  $-(\text{CR}^2\text{R}^3)_n-$  and n is 1.
- 25 15. The compound of claim 4, wherein Y is  $-(\text{CR}^2\text{R}^3)_n-$  and n is 2.
16. The compound of claim 14, wherein A is optionally substituted phenylene.
- 30 17. The compound of claim 16, wherein  $\text{R}^2$ ,  $\text{R}^3$ ,  $\text{R}^a$  and  $\text{R}^b$  are hydrogen.

18. The compound of claim 16, wherein q is 2 and r is 2.
19. The compound of claim 16, wherein m is 0.
- 5 20. The compound of claim 16, wherein m is 1 and R<sup>1</sup> is halo or alkoxy.
21. The compound of claim 16, wherein A is halophenylene, haloalkylphenylene, alkylphenylene, alkoxyphenylene or alkylenedioxyphenylene.
- 10 22. The compound of claim 16, wherein R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup> and R<sup>9</sup> are hydrogen.
23. The compound of claim 5, wherein A is heteroarylene.
24. The compound of claim 23, wherein A is indolylene or pyrimidinylene.
- 15 25. The compound of claim 7, wherein R<sup>10</sup> is hydrogen or alkyl.
26. The compound of claim 25, wherein R<sup>10</sup> is arylalkyl, or aryloxyalkyl.
- 20 27. The compound of claim 26, wherein R<sup>10</sup> is 2-(4-fluorophenyl)-ethyl or 2-(4-methoxyphenyl)-ethyl.
28. The compound of claim 7, wherein R<sup>10</sup> is heteroaryl or heterocyclyl.
- 25 29. The compound of claim 28, wherein R<sup>10</sup> is imidazolinyll such as imidazolin-2-yl.
30. The compound of claim 1, wherein said compound is of the formula:



wherein m, n, p, X, A, E, R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup> and R<sup>10</sup> are as defined in claim 1.

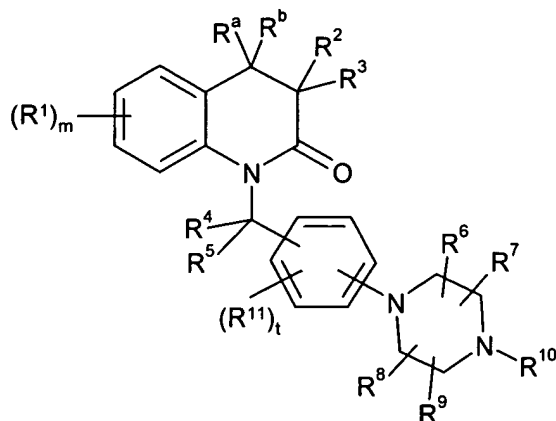
31. The compound of claim 30, wherein said compound is of the formula:



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wherein t is from 0 to 4, each R<sup>11</sup> individually is halo, alkyl, haloalkyl, hydroxy, nitro, cyano or alkoxy, and m, n, X, E, R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup> and R<sup>10</sup> are as defined in claim 30.

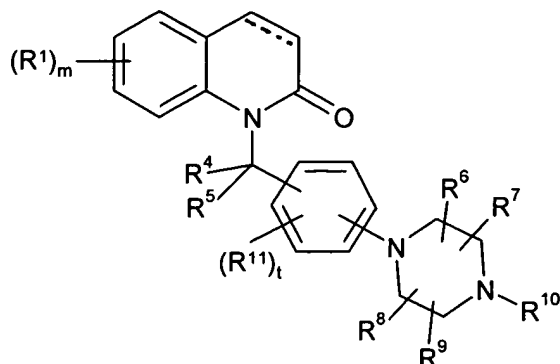
32. The compound of claim 31, wherein said compound is of the formula:



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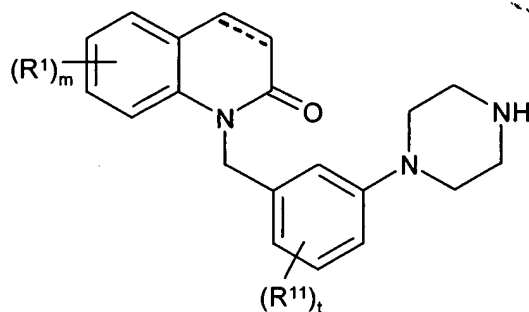
wherein m, t, R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>a</sup> and R<sup>b</sup> are as defined in claim 31.

33. The compound of claim 32, wherein said compound is of the formula:



wherein ----- is an optional bond, and m, t, R¹, R⁴, R⁵, R⁶, R⁷, R⁸, R⁹, R¹⁰ and R¹¹ are as defined  
5 in claim 32.

34. The compound of claim 33, wherein said compound is of the formula:



wherein ----- is an optional bond, and m, t, R¹ and R¹¹ are as defined in claim 33.

35. The compound of claim 34, wherein t is 0 or 1 and R¹¹ is halo, alkyl, haloalkyl or  
10 alkoxy.

36. The compound of claim 35, wherein R¹¹ is chloro, methyl, trifluoromethyl,  
15 methoxy or ethoxy.

37. The compound of claim 34, wherein t is 2 and the R¹¹ groups together define an  
alkylene dioxy radical.

38. The compound of claim 1, wherein said compound is selected from the group consisting of:

- 1-(3-Piperazin-1-yl-benzyl)-3,4-dihydro-1*H*-quinolin-2-one;  
1-(4-Methoxy-3-piperazin-1-yl-benzyl)-3,4-dihydro-1*H*-quinolin-2-one;  
5 1-(3-Chloro-5-piperazin-1-yl-benzyl)-3,4-dihydro-1*H*-quinolin-2-one;  
1-(3-Methoxy-5-piperazin-1-yl-benzyl)-3,4-dihydro-1*H*-quinolin-2-one;  
6-Chloro-1-(3-chloro-5-piperazin-1-yl-benzyl)-3,4-dihydro-1*H*-quinolin-2-one;  
1-(3-Cyclopentyloxy-5-piperazin-1-yl-benzyl)-3,4-dihydro-1*H*-quinolin-2-one;  
1-(3-Hydroxy-5-piperazin-1-yl-benzyl)-3,4-dihydro-1*H*-quinolin-2-one;  
10 1-(3-Ethoxy-5-piperazin-1-yl-benzyl)-3,4-dihydro-1*H*-quinolin-2-one;  
1-[3-Methoxy-5-(4-methylpiperazin-1-yl)-benzyl]-3,4-dihydro-1*H*-quinolin-2-one;  
1-(7-Piperazin-1-yl-2,3-dihydro-benzo[1,4]dioxin-5-ylmethyl)-3,4-dihydro-1*H*-quinolin-  
2-one;  
1-(3-Piperazin-1-yl-5-trifluoromethyl-benzyl)-3,4-dihydro-1*H*-quinolin-2-one;  
15 1-(2-Chloro-5-piperazin-1-yl-benzyl)-3,4-dihydro-1*H*-quinolin-2-one;  
1-(3-Methyl-5-piperazin-1-yl-benzyl)-3,4-dihydro-1*H*-quinolin-2-one;  
8-Methoxy-1-(3-Methoxy-5-piperazin-1-yl-benzyl)-3,4-dihydro-1*H*-quinolin-2-one;  
1-(2-Methoxy-3-piperazin-1-yl-benzyl)-3,4-dihydro-1*H*-quinolin-2-one;  
4-(3-Chloro-5-piperazin-1-yl-benzyl)-7-methoxy-4*H*-benzo[1,4]oxazin-3-one;  
20 1-(3-Piperazin-1-yl-benzyl)-1,3,4,5-tetrahydrobenzo[b]azepin-2-one;  
1-(2-Chloro-6-piperazin-1-yl-pyrimidin-4-ylmethyl)-3,4-dihydro-1*H*-quinolin-2-one;  
1-(3-Methoxy-5-piperazin-1-yl-benzyl)-1*H*-quinolin-2-one;  
1-(5-Piperazin-1-yl-1*H*-indol-3-ylmethyl)-3,4-dihydro-1*H*-quinolin-2-one;  
1-(2-Methoxy-3-piperazin-1-yl-benzyl)-3,4-dihydro-1*H*-quinolin-2-one;  
25 1-(3-Methoxy-5-{4-[2-(4-methoxy-phenyl)-ethyl]-piperazin-1-yl}benzyl)-1*H*-quinolin-2-  
one;  
1-(3-{4-[2-(4-Fluorophenyl)-ethyl]-piperazin-1-yl}-5-methoxybenzyl)-1*H*-quinolin-2-  
one;  
1-{3-[4-(4,5-Dihydro-1*H*-imidazol-2-yl)-piperazin-1-yl]-5-methoxybenzyl}-1*H*-quinolin-  
30 2-one;  
1-[3-Methoxy-5-(4-pyrimidin-2-yl-piperazin-1-yl)-benzyl]-1*H*-quinolin-2-one;

1-(3-{4-[2-(4-Fluoro-phenyl)-ethyl]-piperazin-1-yl}-5-methoxy-benzyl)-8-methoxy-1H-quinolin-2-one;

1-(3-{4-[2-(4-Fluoro-phenoxy)-ethyl]-piperazin-1-yl}-5-methoxy-benzyl)-1H-quinolin-2-one; and

8-Methoxy-1-(3-methoxy-5-{4-[2-(4-methoxy-phenyl)-ethyl]-piperazin-1-yl}-benzyl)-1H-quinolin-2-one.

39. A pharmaceutical composition comprising an efficacious amount of the compound of claim 1 in admixture with a pharmaceutically acceptable carrier.

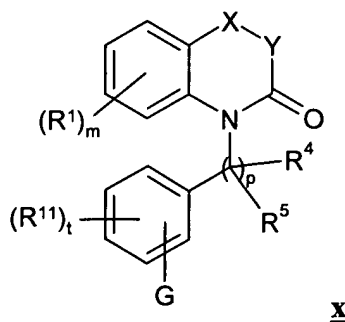
40. A method for treating a central nervous system disease state in a subject, said method comprising administering to said subject a therapeutically effective amount of a compound of claim 1.

41. The method of Claim 40, wherein the disease state is selected from psychoses, schizophrenia, manic depressions, neurological disorders, memory disorders, attention deficit disorder, Parkinson's disease, amyotrophic lateral sclerosis, Alzheimer's disease and Huntington's disease.

42. A method for treating a disorder of the gastrointestinal tract in a subject, said method comprising administering to said subject a therapeutically effective amount of a compound of claim 1.

43. A method for preparing a quinolinone or benzoxazinone compound, said method comprising:

reacting a compound of the formula x:



wherein:

X is O, S or  $-\text{CR}^a\text{R}^b-$ , wherein  $\text{R}^a$  and  $\text{R}^b$  each independently is hydrogen or alkyl;

m is from 1 to 4;

n is 1 or 2;

5 p is from 0 to 3;

t is from 1 to 4;

G is a leaving group;

each  $\text{R}^1$  independently is halo, alkyl, haloalkyl, heteroalkyl, hydroxy, nitro, alkoxy, cyano,  $-\text{S}(\text{O})_s\text{R}^c$ ,  $-\text{NR}^c\text{R}^d$ ,  $-\text{C}(=\text{O})-\text{NR}^c\text{R}^d$ ,  $-\text{SO}_2-\text{NR}^c\text{R}^d$ ,  $-\text{N}(\text{R}^c-\text{C}(=\text{O})-\text{R}^d$  or  $-\text{C}(=\text{O})-\text{R}^c$  where

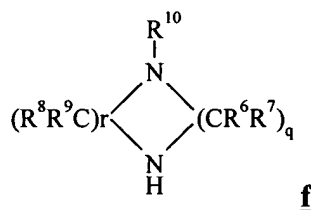
10 s is from 0 to 2 and  $\text{R}^c$  and  $\text{R}^d$  each independently is independently hydrogen or alkyl;

Y is  $-(\text{CR}^2\text{R}^3)_n-$  wherein n is 1 or 2 and  $\text{R}^2$  and  $\text{R}^3$  each independently is hydrogen or alkyl, or X and Y together form an alkenylene group;

$\text{R}^4$  and  $\text{R}^5$ , each independently is hydrogen or alkyl; and

each  $\text{R}^{11}$  individually is halo, alkyl, haloalkyl, hydroxy, nitro, cyano or alkoxy;

15 with a heterocyclic amine of the formula f:



wherein:

q is from 1 to 3;

r is from 1 to 3; and

20  $\text{R}^6$ ,  $\text{R}^7$ ,  $\text{R}^8$ ,  $\text{R}^9$  and  $\text{R}^{10}$  each individually is hydrogen or alkyl;

to form a compound of the formula XIII:



